



An Overview of Prophylactic and Curative Approach for COVID-19 in Unani System of Medicine and Need of Development of the SOPs

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ABSTRACT

COVID-19 also known as Novel Corona Virus Pneumonia, is a viral disease caused by novel corona virus. The infection is highly contagious in nature and spread from person to person through respiratory droplets. According to Unani System of Medicine, epidemiology and clinical features of COVID-19 like fever, cough, tiredness, sore throat, running nose, nasal congestion, difficulty in breathing etc are similar to *Nazla-e-wabai* (Epidemic Influenza) up to a great extent. On the basis of fundamental approach for living a healthy lifestyle and preventive measures during epidemic spread mentioned in classical Unani texts, some standard operating procedures (SOPs) are suggested for prophylactic and curative purpose in the management of COVID-19 pandemic.

Keywords: COVID-19, Unani System of Medicine, SOPs, *Nazla-e-wabai*,

1 Introduction

COVID-19 also known as Novel Corona Virus Pneumonia, is a viral disease caused by SARS-CoV-2 [1]. It is an infectious disease and highly contagious in the nature and produce the Severe Acute Respiratory Distress Syndrome (SARS) [1]. It was first identified in December 2019 in Wuhan (China) so nomenclated as COVID-19. First case was seen in Wuhan city of China, sooner it spread as pandemic in all Asian and European countries. World Health Organization (WHO) declared it as a public medical emergency under International Health Regulations 2005 (IHR 2005) [2,3]. The infection is highly contagious in nature which spread from person to person through respiratory droplets. Causative agent is virulent enough and mutagenic in nature, unfortunately there is no sure shot treatment, so the only left option is prevention. Hence need was felt to review Unani literature for preventive measures. Present paper is tiny effort to elaborate Unani concept to provide some standard operating procedures which may be beneficial in prophylactic as well as remedial approach for this global health issue.

On searching classical Unani texts, it was noticed that prophylactic approach during epidemics and management described under the heading of *Nazla-e-Wabai* are similar to COVID-19 symptomatology upto a great extent.

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2 Observation & Discussion

2.1 Epidemiology and Pathogenesis

COVID-19 infection is highly contagious in nature and spread from person to person through respiratory droplets, but sometimes it may be transmitted as airborne infection with usual onset within 2-14 days of exposure (on average 5th day). As far as infectivity is concerned this novel corona virus can be transmitted prior to the development of symptoms and throughout the course of illness and how long a person remains infectious is uncertain. As duration of viral shedding is variable and depend upon the severity of illness, the median duration of viral RNA shedding from naso– or-oropharyngeal swab is 24 days [2,4]. Clinical manifestations and autopsy studies suggests that the virus is highly mutagenic and different pathogenic potential is attributed its strain specific capacity to replicate and to cope with immune response of host body which behaves differently towards a viral challenge [1]. Viral infection is capable to produce an excessive immune reaction in the host which is called as cytokinin storm and produce the pro-inflammatory cytokines including IL2, IL7, IL10, MCP1, MCP1alfa, TNFalfa reasoned to promote severity [5,6]. The histological finding showed the classical picture of diffuse alveolar damage (DAD), such as hyaline membrane formation, fibrin exudates, vascular congestion, epithelial damage, and diffuse type II pneumocyte hyperplasia. In advance stage mild thickening of alveolar wall is seen. X-ray shows GGO suggestive of early exudative phase of COVID-19 pneumonia. Evidence of consolidation with abundant intra alveolar neutrophilic infiltration with bronchopneumonia and superimposed bacterial infection also seen in some cases. Some non-specific histologic changes such as proteinous exudates, hyperplastic pneumocytes, patchy inflammation and multinucleated giant cells also evidenced by studies [1, 5-8]. Stepwise demonstration of pathogenic events is shown in flowchart Figure 1.

2.2 Clinical Features

Affected patients may be asymptomatic or may have mild to moderate clinical manifestations of Acute Respiratory Distress Syndrome (ARDS) depends upon virulency, host immunity and associated comorbid conditions like diabetes mellitus, hypertension, cancer etc. In mild cases Common symptoms are Fever, Headache, Sore throat, Nasal congestion, Runny nose, Dry cough, Tiredness etc. Some people experience, Cough with sputum, Anosmia, Loss of taste, Vomiting, Diarrhea etc., whereas Shortness of Breath, Tachypnea, Hypoxia and Hypotension are seen in moderate to severe cases as ARDS [9-13].

2.3 Unani perspective for COVID-19

As it is evident that COVID -19 has emerged as a new disease so there is no literature available as such in unani system of medicine, but the signs and symptoms given under *Nazla-e-Wabai* (Epidemic Influenza) such as fever, cough, tiredness, sore throat, running nose, nasal congestion, difficulty in breathing etc are similar to clinical features of COVID-19 up to a great extent [14,15].

Unani fundamental of treatment during epidemic/pandemic (waba) is to maintain equilibrium in Asbaab sitta zaruriya (six essential factors), Immunomodulation and protection of vital organs functions following isolation and quarantine strategy apart and symptomatic approach as per patient profile [16]. Preventive measures explained by eminent Unani scholars during contagious diseases are [17,18]:

- *Abatoon* (Isolation) of patient.
- Avoid contact with infected person (Social distancing)
- Avoid dryness of mouth, take lukewarm water & perform gargle frequently.
- Use of balanced nutritional diet like *Ma-al-sha'eer* (Barley water) and avoid non vegetarian diet.

2.4 Plan for SOPs

Unani treatment is based on three modalities-

1. *Ilaj-bil-Tadbeer* (Regimenal therapy),
2. *Ilaj-bil-Dawa* (pharmaco therapy),
3. *Ilaj-bil-Yad* (Surgery)

As it is evident from various studies that COVID-19 clinically causes pneumonia with destruction of alveolar tissue & formation of fibrinoid membrane in intra alveolar space with hemorrhage leads to severe respiratory distress. Metabolic changes in response to viral toxins leads to partial or severe damage to various body organs causes failure and death due to multiorgan dysfunction syndrome (MODS) [5-8]. So, the line of treatment may be designed by keeping following points:

- Minimise alveolar destruction and lungs parenchyma due to inflammation.
- Patency of airways by removal of cellular debris from alveolar spaces.
- Minimise the lung consolidation and improve lung functions.
- Prevention of vital organ dysfunction by toxic and metabolic disturbances.
- All channels of viral shedding must be checked in order to prevent spread of infection.
- Appropriate dietotherapy.

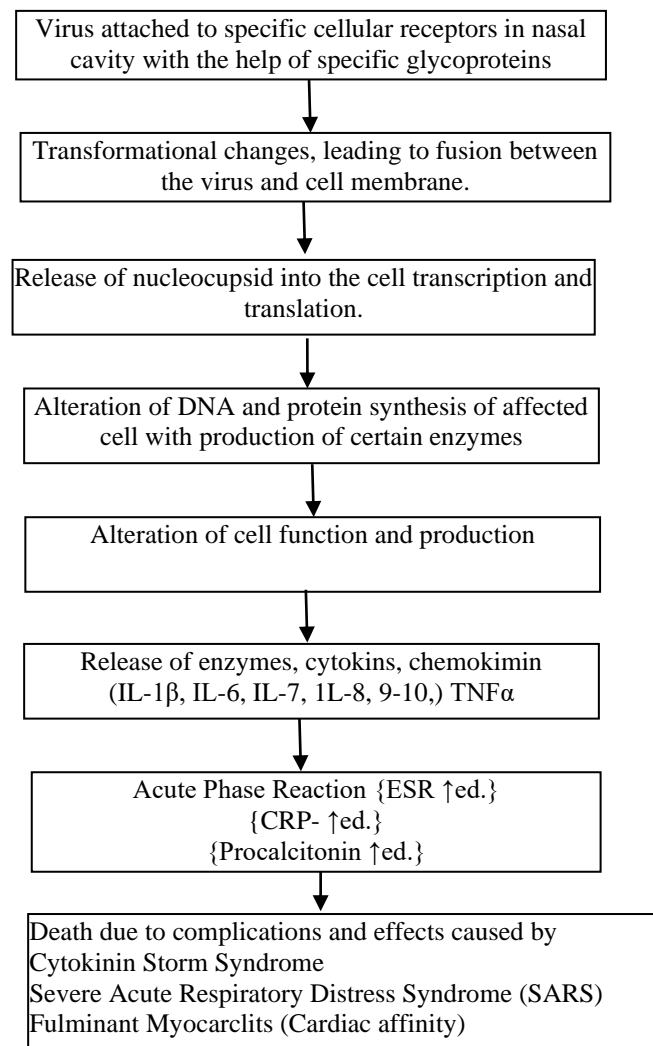


Figure 1: Flow chart showing pathogenesis of COVID-19 [5]

In above regard following Unani Medicines are suggested in order to expel out morbid matters from the body and to protect vital organ functions, hence may be beneficial for the treatment of Corona virus

disease (COVID-19) for mild to moderate illness at home as mentioned in classical Unani literature for *Nazla-e-Wabai* (epidemic influenza).

- Anti inflammatory, Antipyretic, Antiviral/ Antiseptic.
- Antitussive, Mucolytic, Expectorant.
- Deobstruent and vasoprotective/Hemoprotective.
- Immunomodulator and vital organs protective.
- Tranquilizers/ Mood elevators, Antipsychotic.
- Hepato protective and intestinal modulators.

On behalf of above explained parameters of management profile in COVID-19 and related clinical problems, some important unani single drugs as well as compound formulations (Table 1 and 2) and appropriate interventions are mentioned below

Table 1: Some important Unani drugs and their related pharmacological actions.

S.No.	Therapeutic peculiarity	Unani Single Drugs
1	Muhallil (Anti-inflammatory, resolvent), Mulattif (Mucolytic), Mugharri (Soothing), Mukhrij (Expectorant) [16,19,20]	Sapista (<i>Cordia myxa</i>), Unnab (<i>Ziziphus sativa</i>), ZufaKhushk (<i>Hyssopus officinalis</i>), Asal-us-Sus (<i>Glycyrrhiza glabra</i>), Baadiyan (<i>Foeniculum vulgare</i>), Rehan/Tulsi (<i>Ocimum sanctum</i>), Giloy (<i>Tinosporacordifolia</i>), Aspghol (<i>Pantago ovata</i>)
2	Mufatteh (Deobstruent)[19, 20, 21]	Zarneekh (<i>Arsenic trisulfide/ Arsenic disulfide</i>), Honey, Ustu-khuddus (<i>Levendulastoechas</i>), Zufa Khushk (<i>Hyssopus officinalis</i>), Asal-us-Sus (<i>Glycyrrhiza glabra</i>), Baadiyan (<i>Foeniculum vulgare</i>), Afsanteen (<i>Artemisia absinthium</i>)
3	Deobstruent and Vasoprotective/Hemoprotective[19-23]	Honey, Kushta e Hartaal, Kushta Qarnulayyal, Kushta Godanti, Sikanjbeen, Donkey milk etc. may prove to be beneficial in bleeding diathesis in this disease.
4	Immunomodulator and vital organs protective [16, 24, 25]	Rehan/Tulsi (<i>Ocimum sanctum</i>), Giloy (<i>Tinosporacordifolia</i>), Asgandh (<i>Withaniasomnifera</i>), Donkey Milk
5	Mufarrih (Exhilarant), Musakkinaat (Relaxant, Antianxiety), Antipsychotic [19]	Abresham (<i>Bombyx mori</i>), Gul Surkh (<i>Rosa damascena</i>), Ustukhuddus (<i>Levendulastoechas</i>), Gaozaban (<i>Onosmabracteatum</i>), Rehan/Tulsi (<i>Ocimum sanctum</i>), Banafsha (<i>Viola odorata</i>)
6	Hepato protective and intestinal modulators [20]	Afsanteen (<i>Artemisia absinthium</i>). Honey

Table 2: Some compound Unani formulations for symptomatic relief [15,16,22]:

S.No.	Therapeutic peculiarity	Unani Drugs and Dosage
1	For Cough	Habb-e-Surfa 02-02 tablet thrice a day. Sharbat-e-Unnab 25ml with Lukewarm water, every 8 hourly. Sharbat-e-Zoofa Murakkab 25ml with Lukewarm water, every 8 hourly. Lauq-e-Sapistan 5-10gm with Lukewarm water, every 8 hourly.
2	For Fever	Habb-e-Mubarak 02-02 tablet twice a day or thrice a day. Sharbat-e-Khaksi 25ml with Lukewarm water, every 8 hourly.
3	As antidote	Tiryaaq-e-Arba 5gm, twice a day.
4	For rhinorrhea	Tiryaaq-e-Nazla 5gm, twice a day.
5	Immunobooster	Habb-e- Asgand 02 tablet twice a day or thrice a day Khameera Marwareed 10gm before breakfast. Khamira Abresham Sheera Unnab Wala, Arq e Ajeeb etc.

2.4.1 Some Unani Interventions (Nuskha)

Intervention-1

1.	Khamira Aabresham Sheera Unnab Wala (5gm) + Qurs Kushta Qarnul Ayyel (1Tablet or 125 mg)	In morning
2.	Sharbat-e-Zoofa Murakkab (20 ml)	Twice a day
3.	Lauq Sapistan Khiarshamber (10 gm) or [Lauq Katan (10 gm) + Habb-e-Jadwar (1 pill)] or Qurs Kushta Gaudanti (1 Tablet/120 mg)	In the evening
4	Plenty of Maa-al-Asl (Honey water) in sufficient quantity.	

Intervention -2

1.	[Khamira Gauzuban Ambri Jawahar Wala (10 gm) + Qurs Kushta Hartal (1 Tablet or 125 mg)] or [Khamira Gauzuban Ambri Jawahar Wala (10 gm) + Qurs Kushta Gaudanti (1 Tablet or 125 mg)]	In morning
2.	Sharbat-e-Aijaaz (20 ml)	Twice a day
3.	Khameera Banafsha (10 gm) + Qurs Kushta Marjaan (1 Tablet or 125 mg)	In the evening

Intervention -3

1.	[Khameera Marwareed Khas (7 gm) + Qurs Kushta Hartal (1 Tablet or 125 mg)]	In morning
2.	Sualeen4 Tablet (Decoction)	Twice a day
3.	Safoof Kakda Singhi (1 gm) + Asl e Khalis (Pure honey5 ml)	In the evening
4	Plenty of Maa-al-Asl (Honey water) in sufficient quantity	

2.4.2 Dietary recommendations

- Diet should be light, frequent and easy to digest.
- Avoid processed food, carbonated drinks, and junk foods as much as possible.
- Rehydrate body with lukewarm water at frequent intervals, vinegar can be added to make it more beneficial during epidemic/pandemic [19,20].
- Honey and coffee paste added with lukewarm water is effective against irritating cough.[26].
- **Maa'ulasal** (*Honey water*) [19, 23], **Maa'ulshaer** (*Barley water*) [20, 23]. These medicines not only rehydrate body but also provide nutrition and expel out morbid matters from the body.
- **Donkey milk** 250ml is effective in all types of lung ailments, very good immunomodulator and healing agent [20, 27].

2.4.3 Regimenal Approach

For prophylactic and curative purpose and to prevent spread of infection, all the channels of viral shedding must be checked. For this purpose, the following regimens may be applied.

(i) Nasal Route:

- Local application of Roghan e Banafsha (*oil of Viola odorata*)/ Roghan e Kaddu (*Cucurbita pepo*)/ Human milk in both nostrils [20].
- Sniffing of Kalonji (*Nigella sativa*) powder mixed with olive oil 3 times a day [28].
- Inhalation of Arq-e-Ajeeb 2-5 drops [16,24].
- Kafoor (*Camphor*) and Sandal (*Santalum album*) in the form of pouch can be tied in the neck and/smelled frequently [16, 24].

(ii) For ophthalmic Route: Rose water, Burud-e-Kafoor may be applied in both eyes [22,24].

(iii) Oropharyngeal Route: Gargle with salt water, khiyareshambar (*Cassia fistula*), Guava leaves (*Psidium guajava*) Honey based ginger (*Zingiber officinale*) and Asal-us-Sus (*Glycyrrhiza glabra*) lozenges can be prepared for licking [16,23,29].

(iv) Gastrointestinal Route:

- Herbal tea prepared from ginger (*Zingiber officinale*), turmeric (*Curcuma longa*), kalonji, honey and lemon may be consumed 2- 3 times a day [16, 19, 24].
- Freshly prepared green paste (*chatni*) of green coriander (*Coriandrum sativum*)/green mint (*Mentha*), green chillies (*Capsicum annum*), cumin (*Cuminumcyminum*), garlic (*Allium sativa*), salt, lemon/vinegar can be consumed with food helps digestion and cleansing the bowel and may improve intestinal immunity.
- Appropriate disposal of patient's levatories by using disinfectants and bleaching agents etc.

2.4.4 Conditioning of Patient's place:

- Sprinkle Arq e Gulab (*Rose water*), 4 times in and around patient's room [20, 23].
- Fumigation of Camphor, Loban (*Styrax benzoin*), ood (*Agarwood*), Muqil (*Commiphora wightii*) etc.
- Fencing or curtains prepared from Neem (*Azadirachta indica*) leaves, Rose petals, Barg-e-Hina (*Lawsonia inermis*), Khas (*Chrysopogon zizanioides*) etc [20, 23].
- As antiseptic cooler fragrance, Neem (*Azadirachta indica*) leaves decoction, camphor, Arq-e-Gulab (*Rose water*), Arq-e-kewda (*Pandanus odorifer*), Arq-e-Ajeeb can be poured in water [20, 23].

2.4.5 General Measures

- Maintenance of social distancing, cough and sneezing etiquettes.
- Use of face mask and frequent hand hygiene must be followed.
- Yoga and breathing exercises on daily basis.

3 Conclusion

Non availability of any effective anti COVID-19 medicine poses a great challenge to the world population. Since this disease is new and not mentioned in any literature but keeping in view of the mentioned features and disease spread of Nazla-e-Wabaii in ancient unani literature which are very similar to COVID-19, it will be wise to evaluate these time tested guidelines and treatment approaches with either no or least harmful effects for their possible prophylactic and curative (singly or as an adjuvant to conventional medicine) role. We believe that these mentioned approaches will provide a suitable platform for the researchers to plan scientific studies on them and any promising result might help the ailing mankind throughout the globe.

4 Declarations

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4.2 Competing Interests

The authors declare that there is no conflict of interest.

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